Hashemite University		Calculus (1) (110108101) **3 Credit Hours**
Faculty of Science		**Pre-requisite:** None
Department of Basic Science Support	**Course Syllabus**	**First Semester 2014/2015**

Course Information

Instructor	Mohammad Alkhalaileh
Office Location	**IT 224**
Office Hours	11– 12 Sunday, Tuesday and Thursday 9:30-11 Monday and Wensday

Text Book : Calculus, edition: Calculus, *Stewart, Inc. 7ᵗʰ*

References(s)	1. Calculus, by Thomas and Finney, 1996, Addison - Wesley publishing Company 2. Calculus with Analytic Geometry, by Sowkowiski, 1979, Prindle weber and sehmidl . 3. Calculus with Analytic Geometry, by Leithold, 1986, Harper and Row publishers.

Grading plan		
First Exam		25 %
Second Exam		25 %
Final Exam		50 %

Course Objectives

To study functions, limits of functions, continuity, derivatives, some applications on derivatives, integration and some applications on integration.

Teaching and Learning Methods

1. Introducing new definitions and using examples to illustrate new concepts.

2. Introducing theorems, and their applications.

3. Discussing some of the students' solutions of some sample assignment.

4. Making a discussion of the problems of each exam.

Course contents

Sec. In Text	Topics	Week
1.1	Four Ways to Represent a Functions	1
1.2	Mathematical Models: A Catalog of Essential Functions	
1.3	New Functions From Old Functions	
1.5	Exponential Functions	
1.6	Inverse Functions and Logarithmic	2-3
2.2	The Limit of Functions	
2.3	Calculating Limits Using the Limit Laws	4-5
2.5	Continuity	
2.6	Limits at Infinity; Horizontal Asymptotes	6
2.7	Derivatives and Rates of Change	
2.8	The Derivative as a Function	7
3.1	Derivatives of Polynomials and Exponential Functions	
3.2	The Product and Quotient Rules Introduction to Techniques of Differentiation	
3.3	Derivatives of Trigonometric Functions	8
3.4	The Chain Rule	
3.5	Implicit Differentiation	
3.6	Derivative of Logarithmic Functions	9
3.10	Local Linear Approximation, Differentials	
3.11	Hyperbolic Functions	
4.1	Maximum and Minimum Values	9-10
4.2	The Mean-Value Theorem	
4.3	How Derivatives Affect the Shape of a Graph	
4.4	Indeterminate Forms and L'Hôpital's Rule	11
4.5	Summary of Curve Sketching	
4.9	Antiderivatives	
5.1	Areas and Distances	12
5.2	The Definite Integral	
5.3	The Fundamental Theorem of Calculus	
5.4	Indefinite Integrals and the Net Change Theorem	13
5.5	The Substitution Rule	
6.1	Area Between Curves	
6.2	Volumes	14-15
6.3	Volumes by Cylindrical Shells	
6.5	Average Value of a Function	

Attendance is absolutely mandatory. Students who miss a 15% class sessions without a compelling excuse will qualifies the student to be dismissal.